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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,423	12/27/2001	Arttu Laitinen	FORSAL-31	1369

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EXAMINER

JIMENEZ, MARC QUEMUEL

ART UNIT PAPER NUMBER

3726

11

DATE MAILED: 03/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,423

Applicant(s)

LAITINEN ET AL.

Examiner

Marc Jimenez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 11-18 and 27 is/are rejected.
- 7) ☒ Claim(s) 8-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. **Claims 1-18** are objected to because of the following informalities: claims 1, 8, 13, and 18 recite "a whole". The language is unclear. The examiner is reading the limitation to mean that the entire axle journal and end flange are made of powdered metal. However, the claims should be amended to clarify this limitation. In claim 8, line 9 "power" should be changed to - - powder - -. In claim 8, line 10 "on a pipe" should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-3, 11, 12, 15, 17, 18, and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller (1,675,274) in view of Takeda et al. (JP 356087609A).

Miller teaches a method of making a roll end for a roll in a paper or board machine or in a finishing machine (col. 1, lines 1-5, the roll of Miller is considered a "finishing machine", see also col. 2, lines 104-106), the roll comprising an axle journal **3** with an end flange (see at end of lead line **1** in fig. 1), as well as a duct system **5** situated inside the material of the roll end, the method comprising: making the roll end such that the duct system **5** is formed by a pipe

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system **5** placed in a mold (col. 1, lines 16-18) and made of pipe or hollow bar **5**, the pipe system **5** having portions which extend radially within the end flange of the roll end and portions which extend axially within the end flange which are connected to the portions which extend radially by curved portions (see fig. 8), the duct system end flange portions being formed in connection with the stage of making the roll end (col. 1, lines 16-18).

Miller broadly teaches that the duct system **5** is "... imbedded or cast in the material out of which the drum itself is made, ..." (col. 1, lines 16-17) rather than the claimed powder metallurgy process using powdered metal.

Takada et al. teach a powder metallurgy process using powdered metal (constitution, line 13 and lines 17-18) to embed pipes **10**.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Miller with a powder metallurgy process using powdered metal, in light of the teachings of Takada et al., in order to provide a molding process that produces a symmetrical roll surface and a structurally rigid roll.

Regarding claim 2, Miller teaches a duct system out of pipe or hollow bar which extends axially in the axle journal **3**.

Regarding claim 3, "hot hydrostatic pressing" described by Takada et al. in lines 17-18 of the constitution is the same as "hot isostatic pressing". See the definition of "isostatic" and also U.S. 5,051,218 to Matthews both documents are cited in the attached PTO-892 who teaches "hydrostatic (isostatic)" in col. 7, line 5.

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Regarding claims 11 and 12, Miller/Takada et al. teach the invention cited with the exception of using a high-alloy material of gas-atomised medium-carbon tempering steel powder.

At the time of the invention, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have used a high-alloy of gas-atomised medium-carbon tempering steel powder for the metal powder because applicant has not disclosed that using a high-alloy of gas-atomised medium-carbon tempering steel powder for the metal powder provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally as well with either the metal powder taught by Miller/Takada et al. or the claimed metal powder, because both metal powders perform the same function of encapsulating a pipe equally well. Therefore, it would have been an obvious matter of design choice to modify Miller/Takada et al. to obtain the invention as specified in claims 11-12. Furthermore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have selected the claimed material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. See also *Ballas Liquidating Co. v Allied industries of Kansas, Inc.* (DC Kans) 205 USPQ 331.

Regarding claim 15, Miller teaches that the duct system is formed of a pipe system 5 made out of seamless pipe or hollow bar.

Regarding claim 17, Takada et al. teach forming a roll end blank 2 in the powder metallurgy process (constitution, line 13 and lines 17-18), dismantling, breaking or machining

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off (constitution, lines 19-20) the mould 3 from the blank 2, and machining the blank 2 into a desired shape and dimensions (constitution, lines 20-22).

Regarding claim 27, Takada et al. teach placing a duct system 9,10 comprised of a plurality of connected pipes (see the parallel pipes 10 in fig. 1) within a mould 3, filling the mould 3 around the duct system 9,10 with a metal powder 4, applying heat and pressure (purpose, lines 7-8) to the metal powder 4 within the mould to form the metal powder 4 into a desired shape, and removing (constitution, lines 19-20) the mould 3 from the roll end 2, in which the duct system 9,10 comprises at least one duct 9 extending through the an axle journal 1 of the roll end 2, and at least one duct 10 connected to the axle journal duct 9, which extends through an end flange (see the area to the left of lead line 3a) of the roll end 2, the duct system 9,10 being intended for conveyance of a heat transfer medium (purpose, lines 2-3) from the exterior of the roll end into the roll end 2.

4. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Takada et al. as applied to claim 1 above, and further in view of Flasche et al. (4,916,281).

Miller/Takada et al. teach the invention cited with the exception of welding the pipes to make a finished construction.

Flasche et al. teach that it is known to weld pipes together (col. 4, lines 29-37).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Miller/Takada et al. with the step of welding the pipes to make a finished construction, in light of the teachings of Flasche et al., in order to create a pipe system of the desired length by connecting pipes together.

5. **Claims 5-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Takada et al. as applied to claim 1 above, and further in view of Koivukunnas (6,158,501).

Miller/Takada et al. teach the invention cited with the exception of having at least one encased cavity formed on a pipe positioned within the axle journal by a closed sleeve disposed on the at least one pipe, wherein the cavity is left empty and provided with a vacuum by suction.

Koivukunnas teaches at least one encased cavity **14** formed on a pipe **11** positioned within the axle journal **3** by a closed sleeve **12** disposed on the at least one pipe **11**. The cavity **14** is left empty and provided with a vacuum by suction (col.5, lines 53-62).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Miller/Takada et al. with at least one encased cavity formed on a pipe positioned within the axle journal by a closed sleeve disposed on the at least one pipe, wherein the cavity is left empty and provided with a vacuum by suction, in light of the teachings of Koivukunnas, in order to provide an insulating layer for the pipe (as suggested by Koivukunnas at col. 1, lines 20-21) and in order to impart a good thermal insulation capability to a space sealed to such a vacuum (as suggested by Koivukunnas at col. 5, lines 61-62).

6. **Claims 13 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Isometsa (WO 00/58554).

Miller teaches the invention cited with the exception of making the roll end by a powder metallurgy process and using a powder material that conducts heat more poorly than steel used at a desired depth.

Isometsa teaches that it is known to select materials which vary in thermal conductivity based on depth (page 5, lines 22-23) in a powder metallurgy process.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Miller with a powder material that conducts heat more poorly than steel used at a desired depth in a powder metallurgy process, in light of the teachings of Isometsa, in order to lighten the roll in certain areas as suggested by Isometsa at page 5, lines 25-27.

Miller/Isometsa teach the invention cited with the exception of using a powder material that conducts heat more poorly than steel being a metal matrix composite.

At the time of the invention, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have used a powder material that conducts heat more poorly than steel being a metal matrix composite because applicant has not disclosed that using a powder material that conducts heat more poorly than steel being a metal matrix composite provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally as well with either the metal powder taught by Miller/Isometsa or the claimed metal powder, because both metal powder performs the same function of encapsulating a pipe equally well. Therefore, it would have been an obvious matter of design choice to modify Miller/Isometsa to obtain the invention as specified in claims 13-14. Furthermore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have selected the claimed material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious

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design choice. *In re Leshin*, 125 USPQ 416. See also *Ballas Liquidating Co. v Allied industries of Kansas, Inc.* (DC Kans) 205 USPQ 331.

7. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Takada et al. as applied to claim 15 above, and further in view of Tsujimura et al. (5,022,936).

Miller/Takada et al. teach the invention cited with the exception of using austenitic stainless steel for the pipe material.

Tsujimura et al. teach welding using an austenitic stainless steel pipe **5a** as a pipe material (col. 3, lines 1-2).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Miller/Takada et al. with austenitic stainless steel for the pipe material, in light of the teachings of Tsujimura et al., in order to provide a suitable pipe material that will not rust easily.

Allowable Subject Matter

8. **Claims 8-10** would be allowed if rewritten to overcome the objections above.

Response to Arguments

9. Applicant's arguments with respect to claims 1-7, 13-18, and 27 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Interviews After Final

11. Applicant note that an interview after a final rejection will not be granted unless the intended purpose and content of the interview is presented briefly, in writing (the agenda of the interview must be in writing) to clarify issues for appeal requiring only nominal further consideration. Interviews merely to restate arguments of record or to discuss new limitations will be denied. See MPEP 714.13 and 713.09.

Contact Information

12. Telephone inquiries regarding the status of applications or other general questions, by persons entitled to the information, should be directed to the group clerical personnel. In as much

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as the official records and applications are located in the clerical section of the examining groups, the clerical personnel can readily provide status information. M.P.E.P. 203.08. The Group clerical receptionist number is (703) 308-1148.

If in receiving this Office Action it is apparent to applicant that certain documents are missing, e.g., copies of references cited, form PTO-1449, form PTO-892, etc., requests for copies of such papers or other general questions should be directed to Tech Center 3700 Customer Service at (703) 306-5648, or fax (703) 872-9301 or by email to

CustomerService3700@uspto.gov.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Jimenez whose telephone number is **703-306-5965**.

The examiner can normally be reached on **Monday-Friday, between 5:30 am- 2:00 pm**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306 for regular communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

Other helpful telephone numbers are listed for applicant's benefit.

Allowed Files & Publication	(703) 308-6789 or (888) 786-0101
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MJ

March 15, 2004

